UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION III

Site Name:	Procino Plating		
SEMS ID#:	DEN000304203		
DSN:	DE- DEN000306737		
Alias Site Names:	NA		
City:	Blades		
County:	Sussex		
State:	Delaware		
Watershed Priority Area:			
Refer to Report Dated:	June 2019		
Report Type:	Site Inspection		
Report developed by:	EPA Region III		
Site Decision Made by:	Connor O'Loughlin	**Date:**	11/07/2019

DECISION: A - Addressed as part of an existing NPL site

1. **Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**
   - N - NFRAP No Further Remedial Action Planned
   - A - Addressed as part of an existing NPL site (site will be entered if this is selected)
   - D - Deferred to RCRA
   - B - Addressed as part of another non-NPL site
   - W - Referred to Removal, no further Remedial Assessment
   - DN - Deferred to NRC
   - SA - Recommended as a SF Alternative Site
   - OCA - Other Cleanup Activity: Fed Fac (FF) Private Party Lead (PP) State Lead (OS)

2. **Further Assessment Needed Under CERCLA:**
   - H - Higher Priority for further assessment
   - L - Lower priority for further assessment
   - G - Recommended for HRS Scoring
   - F - Referred to Removal, Needs further Remedial Assessment

DISCUSSION/RATIONALE:
The United States Environmental Protection Agency (EPA) in cooperation with Delaware's Department of Natural Resources and Environmental Control (DNREC) have concurred that further investigation and actions are required at the Procino (EPA ID No. DEN000306737), and Peninsula Plating (EPA ID No. DE0001167998) sites in Blades, DE ("the Sites"). The Procino Plating facility has conducted Other Clean-up activities as a Primary Responsible Party (PRP) under DNREC's Voluntary Cleanup Program (VCP) - State of Delaware lead remedial investigation and limited soil cleanup. As part of this site reassessment of Procino Plating an Other Cleanup Activity (OCA) status, EPA identified metals concentrations above the maximum contaminant level (MCL) and perfluoroalkyl and polyfluoroalkyl substance (PFAS) above the Health Advisory Level (HAL).

New information accumulated during the reassessment of the facility in 2016 and upon EPA's suggestion, DNREC collected three groundwater samples from the three public wells. EPA identified PFAS compounds in the drinking water potentially due to electroplating activities from two facilities. EPA and DNREC concurred that due to this information an EPA lead Site Inspection would be completed. Contamination was documented during the assessment emanating from both the Procino and Peninsula Plating facilities and in the area-wide groundwater of the town. The facilities were identified as being adjacent to three public wells operated by the town of Blades and were identified as being impacted by PFOS/PFOA (PFAS) above the Health Advisory Level (HAL).

During the SI in 2018, EPA's Removal program and Site Assessment groups sampled 56 residential wells, 18 existing and 21 new groundwater monitoring locations, and 10 surface water and sediment locations of the Morgan Branch Creek. These sampling tasks were completed due to the potential for metals and perflourinated compounds (PFAS) emanating from the Procino Plating and Peninsula Plating Sites. The two electroplating facilities are within 1,000 feet and less than 200 feet respectively of the public wells and have the potential to be a source of PFAS and metals contamination in the public and residential wells. Additional industrial facilities that were reviewe during the SI include Anchor Enterprises, a steel fabrication facility, and a concrete and cinder-block manufacturer; Delmarva Aggregate.

Site History: Procino Plating Incorporated:
The Procino Plating building was first constructed in 1937 and a second building was added in 1954. The parcel is a 1.6 acre plating facility and has been active and operating as a plating facility since the 1980's and operated as Procino Plating since 1996. The extent of plating operations has been reduced to hard chrome plating for griddle tops and minor aluminum etching. Liquid chromium was stored in two large tanks inside the plant along with additional electroplating solid wastes and plating fluids.

In 1996, Procino Plating installed a subsurface wastewater collection and treatment system to manage and treat the rinse water and the floor drains at the plant. Two smaller buildings were constructed between 1997 and 2002. Following business downturns and several NOV's for improper discharges, the plating process in the second building was dismantled in 2007, and the wastewater piping system and drains were sealed with concrete as part of the DNREC VCP remediation plan due to failed inspections. The chrome tanks were drained and removed from service in 2009. The business currently employs 10 people and has a smaller electroplating operation.

Site History: Peninsula Plating Incorporated:
The Peninsula Plating facility is now closed but the parcel consisted of approximately 5.8 acres. The site was in operation from the 1970's to 1995. There were six older warehouse/storage type buildings present on the property. Historically in the 1980's to 1990's the buildings were leased out to a variety of companies including the metal plating company, a vending company, a sign company, a trash hauling firm, a steel products company, and a bread distribution company. The property is currently vacant.

Peninsula Plating is an inactive plating facility that operated at its location in Blades from approximately 1992 to 1995. Peninsula Plating conducted brass, copper, and chrome plating operations. During the removal activities in 1995 EPA removed nickel sulfate, nickel chloride, sulfuric acid, chromic acid, hexavalent chromium, aka Cr(VI), chloride, copper cyanide, copper sulfate, zinc cyanide, and cadmium fluoroborate. The facility had a wastewater discharge permit issued by Sussex County, which was revoked by DNREC on May 30, 1995. DNREC closed the discharge on August 3, 1995 by pouring concrete into the drain system in front of the building. Based on information in the SI, DNREC indicated a possible septic drain field was in the center of the Blades Commercial Complex property, behind (immediately north) of the former Peninsula Plating facility. A drainage ditch was in the center of the property heading west towards the railroad tracks. Additionally, according to the Town of Blades Water and Maintenance Supervisor, the property on which Peninsula Plating is located was connected to the county sanitary sewer system in 2002.

The Peninsula Plating facility was abandoned in 1995 leaving unattended tanks, vats, drum and other hazardous chemical onsite. Leaks, discharges, spills, and vandalism were documented during operations and closure of the facility. A Site Inspection (SI) was completed in 1999 to investigate the possible existence of released hazardous substances at the Peninsula Plating property. EPA collected environmental samples including surface soils, deep soils, and shallow groundwater. Based on the concentrations in the SI no further actions were taken.

Procino Plating – New Environmental Information

The 2010 PA report indicated Procino Plating used a mist suppressant Fumetrol 140 in the electroplating process. The compound contains 1% to 7% organic fluorosulfonate (PFOS) by weight. According to several inspections, the PA, RI and EPA's SI there have been several spills and releases from the facility the most recent being this year in the fall of 2018.

In November 2018 the Procino Plating facility reported their Chromic Acid tank was overfilled with water and overflowed into a secondary containment and into a soil crawlspace beneath the building. The tank contained chromium trioxide mixed with deionized water and a small amount of sulfuric acid as well as a catalyst (Atotech Heef 25 MS) and mist suppressant (Atotech Fumetrol 21). Fumetrol 21 is marketed as non-PFOS, and the Safety Data Sheet lists the "hazardous ingredients" as polyfluorosulfonic acid at 1.0 to 2.5 percent and diethylene glycol monobutyl ether at 0.1 to 1.0 percent. Approximately, 1 ¼ gallons of Fumetrol was added to the 500-gallon tank plating solution. The total amount of the solution lost is unknown. Post notification to DNREC and EPA following the spil, Procino completed the process of removing the impacted soil and their contractor, Ten Bears Environmental collected post-excavation soil samples of the impacted soil in the crawlspace. Analytical results were to be submitted to DNREC for review and no additional follow-up actions were completed.

New data consists of 18 existing onsite wells on the Procino facility where all of the wells exceeded three-times background concentrations. 21 new wells and 18 existing well have PFAS concentrations onsite ranging from 73.2 ng/L in sample GW-04 to 2,820 ng/L in sample GW-02. Hexavalent chromium was detected in 12 of the 17 wells onsite at elevated concentrations ranging from 0.17 µg/L to 20 µg/L. Hexavalent chromium was detected in all the wells, except a deep well, at concentrations exceeding the EPA RSL of 0.035 µg/L; however, concentrations did not exceed the EPA MCL of 100 µg/L for total chromium.

Pathways and Exposure

Geology

The major hydrogeologic system at the Site is the Columbia Aquifer. It is underlain by the Nanticoke River Group deposits, which consist of the Turtle Branch and the Kent Isle Formations. The Nanticoke River Group is comprised of deposits related to a rise and high stand of sea level that consisted of beach, tidal

flat, open estuary, marsh, swamp, and fluvial depositional environments. The Nanticoke River Group is approximately 25 feet thick and unconformably overlies the Beaverdam Formation. The Beaverdam Formation is a sandy, heterogeneous unit ranging from very coarse sand with pebbles and silty clay. The aquifer functions as both an unconfined and semiconfined aquifer. Saturated thickness ranges from 30 to 100 feet and is the sole source aquifer for the Town of Blades.

Surface Water and Sediment

The Nanticoke River is located approximately 2000 feet northwest of the Peninsula Plating property and 1,300 feet from the Procino Plating property. The Morgan Branch lies at a distance of 1,100 feet to the south of the most contaminated well on the Procino Plating facility. Surface water coming from the site is expected to flow into the Nanticoke River though a combination of overland flow to the groundwater pathways and storm drains. Some surface water flows along the railroad right-of way located to the west of the site. Due to the watershed's unique, threatened, or endangered resident flora and fauna, as well as the recreational opportunities it supports, the Nanticoke has been designated as a "Water of Exceptional Recreational or Ecological Significance.

The SI concluded there is a direct surface water pathway from the site to the Nanticoke River based on metals and PFAS contamination in the sediments and surface water. There are various ecological targets in the 15-mile surface water pathway via shallow ground water flow. The surface water and sediment samples collected from the Morgan Branch and the Nanticoke River support a concern for ecological systems downstream from the sites. PFOS was detected in surface water sample SW-03 at an elevated concentration of 16 ng/L. PFOS, as well as PFOA, were not detected in any other surface water samples. Perfluorononanoic acid (PFNA) was detected in surface water samples SW-03, SW-04, and background sample SW-09 (and its duplicate) ranging from 14.2 to 16.6 nanograms per liter (ng/L). In addition, low-level estimated concentrations of several PFASs were detected in most of the sediment samples. Elevated concentrations of numerous inorganics were detected in three surface water samples and four sediment samples.

Potential targets associated with the surface water migration pathway include the Nanticoke River as a fishery, one federal-designated and two state-designated threatened or endangered species, the Nanticoke River State Wildlife Area, and the approximate 15 miles of wetland frontage located along the Nanticoke River within the 15-mile TDL.

Groundwater

The Town of Blades provides the potable water supply, utilizing three public wells for its supply. The water supply serves approximately 1,600 residents. Due to the identification of PFAS in the three public wells above the HAL the town of Blades installed a carbon treatment unit on the wells in February 2018. Analytical results indicated that all three public supply wells had a summed total concentration of PFOA and PFOS greater than the EPA drinking water HAL of 70 ppt, ranging between 96.2 ppt and 187.1 ppt. The town's wells are located on the adjacent properties 200 feet and 1000 feet of the subject sites. The wells are screened in the unconfined aquifer, approximately 66 to 96 feet below ground surface. Groundwater is the sole drinking water source for both public and domestic potable water in Blades and its surroundings. Public water is supplied to most residences within the town limits of Blades; however, some residences within town limits and the residences located beyond town limits to the southwest and to the northeast rely on domestic groundwater wells for potable water.

Based on new analytical results, a PFAS groundwater plume has been documented at the Site. Three public, eight domestic, and all the onsite monitoring well samples document the presence of primarily PFOS in groundwater at concentrations three times above background levels and as high as 2,820 ppt on the Procino Plating facility. Additionally, the concentrations of PFOS in the public supply wells and the combined concentration of PFOS and PFOA in seven domestic wells exceed the EPA HAL of 70 ng/L.

Five groundwater samples from newly installed wells during the SI and 12 of 17 previously installed wells onsite contained an elevated concentration of hexavalent chromium ranging from 0.11 µg/L to 0.25 µg/L. Analytical results also show a continued documented metals contamination in groundwater, including hexavalent chromium.

Air and Soil

From 1995 to 2018, EPA and DNREC have completed evaluations of the soil to groundwater pathway at the Procino Plating site. Results from the 2015 VCP RI indicated onsite total chromium concentration in the shallow soil samples ranged from 2.1 mg/kg; to 199 mg/kg. The soil sample results indicate there was a release historically. Volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides and polychlorinated biphenyls (PCBs) were not detected in the shallow or deep soil samples.

Four soil samples (two shallow and two deep) were collected from soil borings on the Procino Plating facility property as part of this SI. The four soil samples collected contained detectable concentrations of PFOA, PFOS, and PFBS. The detected concentrations were significantly below RSLs for residential soil. A background soil sample was not collected during the SI.

Decision

During the site assessment of the Procino facility's status, EPA evaluated all existing and new pertinent data and information. New samples from the wells document the presence of primarily PFOS in groundwater at concentrations above the HAL. Elevated concentrations of metals, including hexavalent chromium, zinc, nickel, and copper, were also detected in monitoring well samples onsite. EPA documented concentrations of PFOS in the public supply wells and the combined concentration of PFOS and PFOA in seven domestic wells that exceed the EPA HAL. Approximately 1,600 people are supplied drinking water by the Town of Blades as a sole source aquifer and therefore are impacted groundwater targets.

New information collected during the removal action, and EPA's 2018 SI confirm contamination still exists on the Procino and Peninsula Plating facilities and in the area-wide shallow groundwater. EPA has concluded there is a persistent and continued threat and therefore will address the Procino Plating facility site as part of a greater site-wide groundwater area - i.e. Blades Groundwater (DEN000304203). The comingled PFAS and existing metals contamination will be investigated as a site-wide plume. Due to the ongoing area-wide contamination EPA **recommends the site be addressed as part of another non-NPL site (AX).** DNREC has requested assistance in mitigating the potential threats posed by this Site and has indicated that they concur with additional site assessment under the NPL guidelines. EPA recommends a high priority designation as the NPL process proceeds.